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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/863,128

05/22/2001

F. Patrick Doty

SD-8286

9592

7590

02/22/2005

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MS 9031

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EXAMINER

SMITH, ZANDRA V

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 02/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/863,128

Applicant(s)

DOTY ET AL.

Examiner

Zandra V. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 December 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-20, 22-31 and 33-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-40, 45/35, 45/37, 45/40, 46/35, 46/37, 46/40, 47/35, 47/37, 47/40 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-20, 22-31, 33, 34 and 41-43 is/are rejected.
- 7) ☒ Claim(s) 44, 45/12, 46/12, 47/12, and 48-49 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-6, 8-10, 12-17, 22, 24-25, 27-28, 41-42 are rejected under 35 U.S.C. 102(b) as being anticipated by *Yoshino et al.* (4,975,222).

As to **claims 1-3, 5-6, 8-9, 12-17, 24-25, 27-28, 41-42**, Yoshino discloses radiation detecting elements and methods of detection, comprising:

detection of ionizing radiation (col. 1, lines 15-20) that includes the use of a  $\Pi$ -conjugated polymer, the polymer selected from a group including polypyrrole and poly(p-phenylenevinylene) (col. 3, lines 10-15 and col. 4, lines 65-68). Compositionally alike, metal electrodes and a power supply are also provided (col. 5, line 38). Yoshino does not disclose the claimed electrical resistivity but does disclose an electrical conductivity of  $10^8$  s/cm (col. 4, lines 65-68). Applicant has failed to provide structure of details in the claim to produce the claimed electrical resistivity. Absent that structure or details, it must be assumed that any ionizing radiation detector composed of the claimed polymers would inherently meet the claimed limitations.

As to **claims 10 and 22**, Yoshino discloses everything claimed, as applied above, in addition metal is incorporated into the polymer (col. 3, line 24).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 18, 26, 29, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Yoshino et al. (4,975,222)* in view *Friend et al. (5,523,555)*.

As to **claims 7, 18, 26, and 29**, Yoshino discloses everything claimed, as applied above, with the exception of polyaromatic hydrocarbons, however to do so is well known as taught by Friend. Friend discloses the use of polyaromatic hydrocarbons (col. 5, line 65-68). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a polymer with desired features to produce the desired electro luminescent effects.

As to **claim 33**, Yoshino discloses everything claimed, as applied above, in addition metal is incorporated into the polymer (col. 3, line 24).

As to **claim 34**, Yoshino discloses everything claimed, as applied above, in addition Yoshino provides an example (col. 7, lines 1-10) that includes the addition of lithium into the polymer to produce an electrical conductivity of  $(1.2 * 10^{-10} \text{ s/cm})$ . It would have been obvious to one having ordinary skill in the art at the time of invention to include a metal into the polymer to decrease the electrical conductivity and thereby increase the electrical resistance.

Claims 11, 19-20, 23, 30-31, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Yoshino et al. (4,975,222)*.

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As to **claims 11, 23, and 43**, Yoshino discloses everything claimed, as applied above, in addition Yoshino provides an example (col. 7, lines 1-10) that includes the addition of lithium into the polymer to produce an electrical conductivity of  $(1.2 * 10^{-10} \text{ s/cm})$ . It would have been obvious to one having ordinary skill in the art at the time of invention to include a metal into the polymer to decrease the electrical conductivity and thereby increase the electrical resistance.

As to **claims 19-20, 30-31**, Yoshino discloses everything claimed, as applied above, in addition Yoshino provides an example (col. 5, line 68-col. 6, line 5) that include the addition of polystyrene. It would have been obvious to one having ordinary skill in the art at the time of invention to include polystyrene to allow for detection based on variations in the absorption characteristics.

***Allowable Subject Matter***

Claims 35-40, 45/35, 45/37, 45/40, 46/35, 46/37, 46/40, 47/35, 47/37, 47/40 are allowable over the prior art of record.

Claims 44, 45/12, 46/12, 47/12, and 48-49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, fails to disclose or render obvious, applying external stress to the polymer to change the physical properties, an array of wires embedded in a  $\Pi$ -conjugated material, the array comprising a first set of parallel wires intersecting orthogonally with a second set of parallel spaced apart wires, or the  $\Pi$ -conjugated polymer having a C:H ratio

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and density equal to that of human skin, or carboxylate salts, in combination with the rest of the limitations of the claims.

### ***Response to Arguments***

Applicant's arguments with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection. Additionally, applicant's response to the 112-rejection has been found persuasive, therefore, the 112-rejection has been removed.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Kaempf et al. (5,137,799)*** discloses an electrically conductive resist material that includes a polymer sensitive to ionizing radiation.

***Vardeny et al. (US 6,211,524)*** disclose an enhanced radiation detector that includes a polymer sensitive to ionizing radiation.

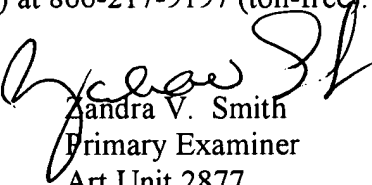
### ***Fax/Telephone Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zandra V. Smith whose telephone number is (571) 272-2429. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Alexandra V. Smith  
Primary Examiner  
Art Unit 2877

February 18, 2005